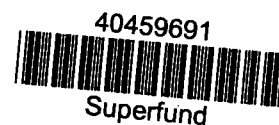


Gunter, Jason

From: Nations, Mark <mnations@doerun.com>
Sent: Tuesday, May 13, 2014 2:31 PM
To: Gunter, Jason
Cc: Yingling, Mark; Wohl, Matthew; robert.hinkson@dnr.mo.gov; brandon.wiles@dnr.mo.gov; Ty Morris (TMorris@barr.com); Cummings, Mark; Hedrick, Samantha K.; Sanders, Amy B.; Bodnar, Gen
Subject: Rivermines Progress Report
Attachments: RM_04-14[1].doc; 2014-04-16 RM NPDES Pace Lab Report.pdf

Jason, attached is the April 2014 report.

07CR



4.2

**THE
DOE RUN
COMPANY**

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

May 12, 2014

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: The Doe Run Company – Elvins/Rivermines Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 56 of the Unilateral Administrative Order (UAO) (CERCLA-07-2005-0169) for the referenced project and on behalf of The Doe Run Company, the progress report for the period April 1, 2014 through April 30, 2014 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,



Mark Nations
Mining Properties Manager

Enclosures

c: Mark Yingling – TDRC (electronic only)
Matt Wohl – TDRC (electronic only)
Robert Hinkson – MDNR
Brandon Wiles – MDNR
Ty Morris – Barr Engineering

Elvins/Rivermines Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: April 1, 2014 – April 30, 2014

1. Actions Performed and Problems Encountered This Period:

- a. During the period, flow from the seepage pond was directed through the roughing filter, the iron filter, and then into the round tank, where it discharged directly into the effluent channel.
- b. Continued collecting analytical samples from the pilot test three times per week. Samples were taken from the seepage pond (system influent) and the ZVI filter effluent (RMP-Polish).
- c. Continued to take analytical samples from the seep pond effluent and the western treatment pond effluent to monitor the metals reduction of the treatment pond.
- d. Flow to the east treatment cell remained off throughout this period.

2. Analytical Data and Results Received This Period:

- a. At the time this progress report was developed, the analytical reports for the samples taken from the pilot test for this period were unavailable. Results for this period will be provided in the May progress report.
- b. During this period, water samples were collected from just upstream of Old Missouri Highway 32, as well as from upstream and downstream of the confluence of the site discharge with Flat River. The analytical results for this event are included with this progress report.
- c. During this period, the Ambient Air Monitoring Reports for Fourth Quarter 2013 and January 2014 were completed. Any issues identified in these reports are discussed below. A copy of these documents has been sent to your attention. These will be the last Ambient Air Monitoring Reports you will be receiving from Barr. All future Ambient Air Monitoring Reports will be coming from Doe Run.

The Fourth Quarter 2013 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No sample was taken on the Big River #4 TSP monitor on 10/04/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- There was a QA blank filter for the Rivermines #3 (Water Plant) TSP and PM₁₀ monitors on 10/11/13.
- No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/14/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
- No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/15/13 due to an electrical issue with the GFCI plug. Upon discovery, this issue was addressed.
- No sample was taken on the Big River #4 TSP monitor on 10/16/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
- No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/18/13 or on 10/21/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
- No sample was taken on the Big River #4 TSP monitor on 10/29/13 due to an electrical failure. Upon discovery, this issue was addressed.
- No sample was taken on the Big River #4 TSP monitor on 10/30/13 due to a mechanical failure. Upon discovery, this issue was addressed.

- No sample was taken on the Rivermines #3 (Water Plant) PM₁₀ monitor on 10/31/13 due to a mechanical failure. Upon discovery, this issue was addressed.
- No sample was taken on the Rivermines #2 (Wood and Barton) TSP monitor on 11/15/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- There was a QA blank filter for the Big River #4 QA TSP monitor on 11/19/13.
- There was a QA blank filter for the Rivermines #2 (Wood and Barton) PM₁₀ monitor on 11/19/13.
- No sample was taken on the Rivermines #3 (Water Plant) PM₁₀ monitor on 11/21/13 due to a mechanical failure. Upon discovery, this issue was addressed.
- No samples were taken with the TSP monitors on 11/27/13, 11/28/13, or 11/29/13 due to the holiday.
- No samples were taken with the PM₁₀ monitors on 11/30/13 due to the holiday.
- No sample was taken on the Big River #4 TSP monitor on 12/03/13 and 12/04/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #3 (water plant) TSP monitor on 12/06/13 and 12/27/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #2 (Wood & Barton) TSP monitor on 12/17/13 and 12/27/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #1 (office) TSP monitor on 12/27/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No samples were taken with the TSP monitors on 12/24/13, 12/25/13, or 12/31/13 due to the holiday.

The January 2014 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the TSP monitors on 01/01/14 due to the holiday.
- No sample was taken on the Big River #4 QA PM₁₀ monitor on 01/05/14 and 01/11/14 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #3 (water plant) TSP monitor on 01/09/14 and 01/10/14 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #1 (office) TSP monitor on 01/23/14 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- No sample was taken on the Rivermines #2 (Wood & Barton) TSP monitor on 01/29/14 and 01/30/14 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.

3. Developments Anticipated and Work Scheduled for Next Period:

- a. Continue analytical sampling and field measurements three times a week.
- b. Continue to operate the renovated pilot test.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.
- e. Continue monitoring the western treatment pond to evaluate the hydraulics and the metals reduction.

f. Continue to work on a long-term surface water management plan for the site.

4. Changes in Personnel:

a. None.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.



Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

April 24, 2014

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

Dear Amy Sanders:

Enclosed are the analytical results for sample(s) received by the laboratory on April 17, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 13-012-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-13-4

Utah Certification #: KS000212013-3

Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60167221001	RIVERMINES 001	Water	04/16/14 11:36	04/17/14 08:30
60167221002	RIVERMINES UPSTREAM	Water	04/16/14 11:52	04/17/14 08:30
60167221003	RIVERMINES DOWNSTREAM	Water	04/16/14 11:25	04/17/14 08:30

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SAMPLE ANALYTE COUNT

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60167221001	RIVERMINES 001	EPA 200.7	NDJ	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		SM 2540F	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60167221002	RIVERMINES UPSTREAM	EPA 200.7	NDJ	6	PASI-K
		EPA 200.7	NDJ	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60167221003	RIVERMINES DOWNSTREAM	EPA 200.7	NDJ	6	PASI-K
		EPA 200.7	NDJ	3	PASI-K
		SM 2540D	RAH	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

Sample: RIVERMINES 001		Lab ID: 60167221001		Collected: 04/16/14 11:36		Received: 04/17/14 08:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Cadmium	1.8J	ug/L	5.0	0.56	1	04/21/14 13:00	04/22/14 14:51	7440-43-9	
Lead	ND	ug/L	5.0	2.2	1	04/21/14 13:00	04/22/14 14:51	7439-92-1	
Zinc	8740	ug/L	50.0	12.5	1	04/21/14 13:00	04/22/14 14:51	7440-66-6	
2540D Total Suspended Solids		Analytical Method: SM 2540D							
Total Suspended Solids	7.0	mg/L	5.0	5.0	1		04/18/14 10:05		
2540F Total Settleable Solids		Analytical Method: SM 2540F							
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		04/17/14 12:23		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	745	mg/L	100	9.8	100		04/20/14 20:26	14808-79-8	

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

Sample: RIVERMINES UPSTREAM Lab ID: 60167221002 Collected: 04/16/14 11:52 Received: 04/17/14 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	ND	ug/L	5.0	0.56	1	04/21/14 13:00	04/22/14 14:53	7440-43-9	
Calcium	27000	ug/L	100	7.8	1	04/21/14 13:00	04/22/14 14:53	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	04/21/14 13:00	04/22/14 14:53	7439-92-1	
Magnesium	15300	ug/L	50.0	17.0	1	04/21/14 13:00	04/22/14 14:53	7439-95-4	
Total Hardness by 2340B	130000	ug/L	500		1	04/21/14 13:00	04/22/14 14:53		
Zinc	ND	ug/L	50.0	12.5	1	04/21/14 13:00	04/22/14 14:53	7440-66-6	
200.7 Metals, Dissolved (LF) Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	04/22/14 16:00	04/23/14 12:38	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	04/22/14 16:00	04/23/14 12:38	7439-92-1	
Zinc, Dissolved	ND	ug/L	50.0	12.5	1	04/22/14 16:00	04/23/14 12:38	7440-66-6	
2540D Total Suspended Solids Analytical Method: SM 2540D									
Total Suspended Solids	ND	mg/L	5.0	5.0	1		04/18/14 10:05		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	19.1	mg/L	5.0	0.49	5		04/20/14 20:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Date: 04/24/2014 10:51 AM

Page 6 of 16



ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

Sample: RIVERMINES Lab ID: 60167221003 Collected: 04/16/14 11:25 Received: 04/17/14 08:30 Matrix: Water
DOWNSTREAM

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	ND	ug/L	5.0	0.56	1	04/21/14 13:00	04/22/14 15:00	7440-43-9	
Calcium	32700	ug/L	100	7.8	1	04/21/14 13:00	04/22/14 15:00	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	04/21/14 13:00	04/22/14 15:00	7439-92-1	
Magnesium	17200	ug/L	50.0	17.0	1	04/21/14 13:00	04/22/14 15:00	7439-95-4	
Total Hardness by 2340B	152000	ug/L	500		1	04/21/14 13:00	04/22/14 15:00		
Zinc	174	ug/L	50.0	12.5	1	04/21/14 13:00	04/22/14 15:00	7440-66-6	
200.7 Metals, Dissolved (LF) Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	04/22/14 16:00	04/23/14 12:44	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	04/22/14 16:00	04/23/14 12:44	7439-92-1	
Zinc, Dissolved	133	ug/L	50.0	12.5	1	04/22/14 16:00	04/23/14 12:44	7440-66-6	
2540D Total Suspended Solids Analytical Method: SM 2540D									
Total Suspended Solids	6.0	mg/L	5.0	5.0	1		04/18/14 10:06		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	36.2	mg/L	5.0	2.5	5		04/22/14 15:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

QC Batch: MPRP/26918 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60167221001, 60167221002, 60167221003

METHOD BLANK: 1364203 Matrix: Water

Associated Lab Samples: 60167221001, 60167221002, 60167221003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	04/22/14 14:49	
Calcium	ug/L	ND	100	04/22/14 14:49	
Lead	ug/L	ND	5.0	04/22/14 14:49	
Magnesium	ug/L	ND	50.0	04/22/14 14:49	
Total Hardness by 2340B	ug/L	ND	500	04/22/14 14:49	
Zinc	ug/L	ND	50.0	04/22/14 14:49	

LABORATORY CONTROL SAMPLE: 1364204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Lead	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	9570	96	85-115	
Total Hardness by 2340B	ug/L		64400			
Zinc	ug/L	1000	1000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1364205 1364206

Parameter	Units	60167221002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	997	1010	100	101	70-130	1	10	
Calcium	ug/L	27000	10000	10000	36000	36700	91	98	70-130	2	9	
Lead	ug/L	ND	1000	1000	1010	1030	101	103	70-130	1	10	
Magnesium	ug/L	15300	10000	10000	24400	24700	91	94	70-130	1	9	
Total Hardness by 2340B	ug/L	130000			190000	193000				2		
Zinc	ug/L	ND	1000	1000	982	993	98	99	70-130	1	11	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

QC Batch: MPRP/26947 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60167221002, 60167221003

METHOD BLANK: 1364871 Matrix: Water
Associated Lab Samples: 60167221002, 60167221003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	04/23/14 12:35	
Lead, Dissolved	ug/L	ND	5.0	04/23/14 12:35	
Zinc, Dissolved	ug/L	ND	50.0	04/23/14 12:35	

LABORATORY CONTROL SAMPLE: 1364872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1030	103	85-115	
Lead, Dissolved	ug/L	1000	1060	106	85-115	
Zinc, Dissolved	ug/L	1000	1060	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1364873 1364874

Parameter	Units	60167221002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1020	103	102	70-130	1	10	
Lead, Dissolved	ug/L	ND	1000	1000	1040	1040	104	104	70-130	0	10	
Zinc, Dissolved	ug/L	ND	1000	1000	1180	1170	117	116	70-130	1	11	

REPORT OF LABORATORY ANALYSIS

**QUALITY CONTROL DATA**

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

QC Batch: WET/47383

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60167221001, 60167221002, 60167221003

METHOD BLANK: 1362861

Matrix: Water

Associated Lab Samples: 60167221001, 60167221002, 60167221003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	04/18/14 10:03	

SAMPLE DUPLICATE: 1362862

Parameter	Units	60167246002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	225	225	0	10	

SAMPLE DUPLICATE: 1362863

Parameter	Units	60167221002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

QC Batch: WETA/29083

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 60167221001, 60167221002

METHOD BLANK: 1363977

Matrix: Water

Associated Lab Samples: 60167221001, 60167221002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	04/20/14 17:22	

LABORATORY CONTROL SAMPLE: 1363978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1363979 1363980

Parameter	Units	60167015001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Sulfate	mg/L	ND	2500	2500	2590	2610	104	105	80-120	1 15	

MATRIX SPIKE SAMPLE: 1363981

Parameter	Units	60167015005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	2500	2720	96	80-120	

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

QC Batch: WETA/29089

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 60167221003

METHOD BLANK: 1364416

Matrix: Water

Associated Lab Samples: 60167221003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	04/22/14 14:25	

LABORATORY CONTROL SAMPLE: 1364417

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1364420

1364421

Parameter	Units	60166797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Sulfate	mg/L	372	250	250	590	602	88	92	80-120	2 15	

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Date: 04/24/2014 10:51 AM

Page 12 of 16



QUALIFIERS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60167221

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES MONTHLY (RIVERMINES)

Pace Project No.: 60167221

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60167221001	RIVERMINES 001	EPA 200.7	MPRP/26918	EPA 200.7	ICP/20445
60167221002	RIVERMINES UPSTREAM	EPA 200.7	MPRP/26918	EPA 200.7	ICP/20445
60167221003	RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/26918	EPA 200.7	ICP/20445
60167221002	RIVERMINES UPSTREAM	EPA 200.7	MPRP/26947	EPA 200.7	ICP/20461
60167221003	RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/26947	EPA 200.7	ICP/20461
60167221001	RIVERMINES 001	SM 2540D	WET/47383		
60167221002	RIVERMINES UPSTREAM	SM 2540D	WET/47383		
60167221003	RIVERMINES DOWNSTREAM	SM 2540D	WET/47383		
60167221001	RIVERMINES 001	SM 2540F	WET/47366		
60167221001	RIVERMINES 001	EPA 300.0	WETA/29083		
60167221002	RIVERMINES UPSTREAM	EPA 300.0	WETA/29083		
60167221003	RIVERMINES DOWNSTREAM	EPA 300.0	WETA/29089		

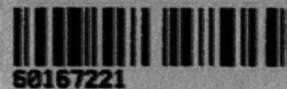
REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60167221



Client Name: Doe Run

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7985 6663 9881

Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other EPP

Thermometer Used: T-230 / T-194

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.4

Date and initials of person examining contents: 4/17/14 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>Self Sel</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12.
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State:

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

4/17/14

